REMARKS

Claims 1-38 were pending in the present application. Claims 1, 8, and 27 have been amended to clarify claimed subject matter and/or correct informalities. Support for the amendments may be found in the original Specification at least at pages 9, 10, 11, and in Figures 3 and 4. No new matter has been introduced by these amendments.

Applicant has amended the Specification to correct informalities for reference numbers in the Specification. Support for the reference numbers may be found in the original Figures 3 and 4. Again, no new matter has been introduced.

Claims 1-38 are for consideration upon entry of the present Amendment. Applicant requests favorable consideration of this response and allowance of the subject application based on the following remarks.

Statement of Substance of Interview

Applicant appreciates the Office's participation in a telephonic conference of November 8, 2006.

During the interview, the claimed subject matter of the application and the Schneider reference were discussed. In particular, Applicant presented arguments along the lines of those set forth below in the section entitled "Claim Rejections 35 U.S.C. §102". Specifically, Applicant presented arguments as to how the subject matter in the application includes features, such as filter table, inverse query engine, and bounds.

Also discussed during the interview were proposed amendments to the claims. In the interest of expediting prosecution of the application, and without conceding the propriety of the rejection, Applicant proposed to amend some of the independent claims

to further clarify claimed subject matter. The Examiner indicated that an updated search would be needed, and requested that the proposed amendments be presented in writing. Applicant now submits the amendments in writing in the Response to the Office Action.

Preliminary Issue Re: Rejection of Claim 17

Applicant directs the Office to page 10 of the Office Action, where the Office did not provide any citations in Schneider disclosing "deducting the query size of each query removed from the cache size"; and "adding a new query size to the cache size, the new query size identifying a size of the new query added to the inverse query engine cache", as recited in Claim 17. Pursuant to MPEP §707.05, Applicant respectfully requests the Office should cite appropriate prior art and its pertinence should be explained. While Applicant considers the merits of the Office's evidence and reasoning, Applicant respectfully requests clarification (MPEP §707.05).

Furthermore, Applicant has read the reference, Schneider, and could not find the recited features of Claim 17, as mentioned above. Applicant finds that Schneider is directed to a large cache size is optimal employing multiple rows (col. 7, lines 48-53). Schneider keeps statistics on cache "hits" and "misses" and tracks the LRU Depth of the deepest hit (col. 7, lines 59-64) to determine that if a large cache size is best, the system has already achieved optimal cache size (col. 8, lines 4-5). If not, the cache goes through three phases, where new values will not displace any old values in Phase I (col. 8, lines 21-22, and 30-31). If the LRU Depth is less than one-half the cache depth, the system reduces the cache size (col. 9, lines 6-8). Thus, Schneider does not disclose, teach or suggest Applicant's claimed subject matter.

Claim Rejections 35 U.S.C. §102

Claims 1-5, 7-8, 11-12, 14-15, 17-20, 22-24, 26-27, 31-33, and 37 are rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,668,987 to Schneider. Applicant respectfully traverses this rejection. Anticipation under §102 requires that each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference (MPEP §2131).

Without conceding the propriety of the stated rejections, and only to advance the prosecution of this application, Applicant has amended **independent Claim 1**, to clarify further features of the subject matter. Claim 1 now recites:

> A method, comprising:
> receiving a request to add a new filter to a filter table stored in an inverse query engine cache;
> adding the new filter to the filter table, wherein the new filter comprises at least one of a condition field, a data field, an expiration time field, a filter weight field, or a permanent flag field;
> maintaining the inverse query engine cache at or below a maximum cache size, wherein the inverse query engine cache comprises at least one of an add filter module, a remove filter module, a matcher, a maintainer, a filter table, a most recently used list, or an expiration list;
> removing a filter based on an expiration time;
> trimming the filter table; and
> wherein the inverse query engine cache is used exclusively by an inverse query engine to store filters associated therewith.

Schneider Does Not Disclose Recited Features of Claims 1, 8, and 27

Schneider does not disclose expressly or inherently "the new filter comprises at least one of a condition field, a data field, an expiration time field, a filter weight field, or a permanent flag field and the inverse query engine cache comprises at least one of an add filter module, a remove filter module, a matcher, a maintainer, a filter table, a most

recently used list, or an expiration list", as recited in Claim 1. Schneider describes cache rows are filled on a least-recently used basis (col. 7, lines 26-27). The new values added to the cache will not displace any old values (col. 8, lines 31-32). If no hits occurred, the first row is used for the rest of the execution (col. 8, lines 44-45) and recheck hits should occur at Phase III (col. 8, lines 47-48). If no hits, the system drops the cache (col. 9, lines 56-58).

The evidence is insufficient to support a prima facie anticipation rejection of the claimed subject matter. Consequently, Applicant respectfully submits that Claim 1 is not anticipated by Schneider and requests that the §102 rejection be withdrawn.

Dependent Claims 2-5 and 7 depend directly from Claim 1 and thus are allowable as depending from an allowable base claim. These claims are also allowable for their own recited features that, in combination with those recited in Claim 1, are not disclosed by Schneider.

Independent Claims 8 and 27 as amended recites features similar to those in Claim 1 and hence benefits from the same arguments directed above to Claim 1. Furthermore, Schneider does not disclose "maintain a size of the filter table within definite cache bounds", as recited in Claim 8.

Dependent Claims 11-12, 14-15, 31-33, and 37 depend directly or indirectly from one of independent Claims 8 and 27, and are allowable by virtue of this dependency, as well as for the additional features that they recite.

Applicant asserts Schneider fails to anticipate independent Claims 1, 8, and 27 because Schneider does not disclose the recited features of the claimed subject matter. Accordingly, Applicant requests that the §102 rejections be withdrawn.

§102 Rejection: Claim 17

Turning now to **independent Claim 17**, which recites:

> One or more computer-readable media storing computer-executable instructions that, when executed on a computer, perform the following steps:
>
> receiving a request to add a new query to an inverse query engine cache that stores multiple queries, each query having a query size associated therewith;
>
> **deriving a cache size that is a sum of query sizes of the queries stored in the inverse query engine;**
>
> determining if the cache size is at greater than or equal to a maximum cache size;
>
> removing one or more queries from the inverse query engine cache if the cache size is greater than or equal to the maximum cache size;
>
> **deducting the query size of each query removed from the cache size;**
>
> adding the new query to the inverse query engine cache; and
>
> **adding a new query size to the cache size, the new query size identifying a size of the new query added to the inverse query engine cache.**

Schneider Does Not Disclose Recited Features of Claim 17

First, the Office states the recited "deriving a cache size that is a sum of query sizes of the queries stored in the inverse query engine" is disclosed by Schneider. The citation provided by the Office is shown below:

> *Schneider, Abstract:*
>
> In particular, a subquery cache is provided having a size which can be dynamically adjusted by the system during execution of the query, for achieving an optimal cache size.

Applicant respectfully disagrees. The section cited by the office merely shows a subquery cache can be dynamically adjusted in Schneider to achieve an optimal cache

size. This is not **deriving** a cache size that is a **sum of query sizes of the queries stored** in the inverse query engine, as recited in Claim 17.

Second, the Office implies "deducting the query size of each query removed from the cache size" is disclosed by Schneider. However, the Office failed to provide any citations in Schneider to illustrate the recited features.

Third, the Office states "adding a new query size to the cache size, the new query size identifying a size of the new query added to the inverse query engine cache" is disclosed by Schneider. Again, the Office failed to provide any citations in Schneider to show the recited features.

The evidence or lack of evidence do not disclose expressly or inherently the features, as recited in Claim 17. Consequently, Applicant respectfully submits that Claim 17 is not anticipated by Schneider and requests that the §102 rejection be withdrawn.

Dependent Claims 18-20, 22-24, and 26 depend directly or indirectly from Claim 17 and are allowable by virtue of this dependency, as well as for the additional features that they recite. Consequently, Applicant respectfully submits that these claims are not anticipated by Schneider and requests that the §102 rejection be withdrawn.

Claim Rejections under 35 U.S.C. § 103: A and B

A. Claims 6, 9-10, 13, 16, 21, 25, 28-30, 34-36, and 38 stand rejected under 35 U.S.C. §103(a) as being obvious over Schneider in view of U.S. Patent Application Publication No. 2003/0165160 to Minami et al. (hereinafter "Minami").

Applicant respectfully traverses the rejection. To establish a *prima facie case* of obviousness, three basic criteria must be met. First, there must be some suggestion or

motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations (MPEP §2142).

All of the §103(a) rejection relies on Schneider. As explained above with respect to the rejection under 35 U.S.C. §102(b), Applicant submits that Schneider does not disclose the features recited in independent Claims 1, 8, 17, and 27. **Dependent Claims 6, 9-10, 13, 16, 21, 25, 28-30, 34-36, and 38** depend directly or indirectly from one of independent Claims 1, 8, 17, and 27. These dependent claims are allowable by virtue of this dependency, as well as for the additional features that they recite.

Minami Does Not Teach or Suggest identifying one or more expired filters in the filter table and removing at least one of the identified expired filters

The Office states that Schneider does not teach identifying one or more expired filters in the filter table; and removing at least one of the identified expired filters (Office Action, page 13). Applicant agrees with this assessment.

However, Minami does not compensate for the deficiencies of Schneider, as neither reference teaches or suggests the recited features of Claim 1. Minami uses Address Resolution Protocol (ARP) cache module for static and dynamic ARP cache entries for IP address to Ethernet address mapping ([0256]). The static ARP may be replaced with the dynamic ARP cache date to prevent the static ARP cache from becoming outdated ([0265]).

The Office has failed to establish a motivation sufficient for one or ordinary skill in the art to combine these references. The motivation provided by the Office "recognize the benefits of identifying and removing an expired entry that is no longer needed, as demonstrated by Minami and to incorporate it into the existing system disclosed by Schneider to further enhance the cache replacement strategy beyond the commonly adopted Least Recently Used scheme and makes better utilization of the precious resource of cache capacity" is not specific. The motivation "benefits and enhances", is too general because it could cover almost any alteration contemplated of Schneider and does not address why this specific proposed modification would have been obvious. The Office implies the expired entry is 'no longer needed', but Minami states that "a static ARP may be replaced with a dynamic ARP cache data to prevent static ARP from being outdated" ([0265]), which is not the same as no longer needed. Thus, this rejection is improper.

Additionally, there is nothing in either of the references that would suggest incorporating "identifying and removing an expired entry from Minami would enhance the cache replacement strategy and make better utilization of the precious resource of cache capacity in Schneider". There is no suggestion or incentive of modifying Schneider with Minami. The Office cannot improperly rely on hindsight without evidence of motivation to propose the suggested combination.

Furthermore, the proposed modification cannot render the prior art unsatisfactory for its intended purpose (MPEP §2143.01V). The proposed modification would render Schneider unsatisfactory for its intended purpose of keeping statistics on cache "hits" and "misses", especially if the cache expired after five to 15 minutes, as described in Minami.

This rejection is improper. Applicant respectfully requests the §103 rejection be withdrawn.

B. Claim 16 stands rejected under 35 U.S.C. §103(a) as being obvious over Schneider in view of U.S. Patent No. 4,928,239 to Baum et al. (hereinafter "Baum"). Applicant respectfully traverses.

Dependent Claim 16 depends indirectly from independent Claim 8, which was discussed above. The Office states that Schneider does not teach a most recently used list (Office Action, page 15). Applicant agrees with this assessment. Without conceding that Baum provides the teaching for which it was cited in the Action, Applicant submits that Baum does not teach what is missing from Schneider and Minami to support a §103 rejection of Claim 16.

First, the Office has failed to establish a motivation sufficient for one of ordinary skill in the art to combine Schneider with the references. The motivation provided by the Office "replacing a cache entry, a "least recently used" entry should be the first one to be replaced while a "most recently used" entry should be the last one to be replaced" is not sound. There is no sound basis to combine the references. Thus, there is no motivation to combine the references. This rejection is improper.

Second, the Office has failed to establish a motivation sufficient for one of ordinary skill in the art to combine Schneider, Minami, and Baum. The motivation provided by the Office "most recently used" is implied by "least recently used" as far as cache entry replacement is concerned is not well reasoned. Schneider uses a least recently used so there would not be any reason to combine it with the other references.

There is no motivation to combine the references, so this rejection is improper. Applicant requests the §103 rejection be withdrawn.

Conclusion

Claims 1-38 are in condition for allowance. Applicant respectfully requests reconsideration and prompt allowance of the subject application. If any issue remains unresolved that would prevent allowance of this case, the Office is requested to contact the undersigned attorney to resolve the issue.

Respectfully Submitted,

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